

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
 US Department of Commerce
 United States Patent and Trademark
 Office, PCT
 2011 South Clark Place Room
 CP2/5C24
 Arlington, VA 22202
 ETATS-UNIS D'AMERIQUE
 in its capacity as elected Office

Date of mailing (day/month/year) 04 May 2001 (04.05.01)	
International application No. PCT/NZ00/00160	Applicant's or agent's file reference 18032/3X101
International filing date (day/month/year) 18 August 2000 (18.08.00)	Priority date (day/month/year) 19 August 1999 (19.08.99)
Applicant ENGEL, Gabriel, Damon et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
 30 January 2001 (30.01.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Claudio Borton Telephone No.: (41-22) 338.83.38
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PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 20 JUL 2001

WIPO

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Applicant's or agent's file reference 18032/3X101	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. PCT/NZ00/00160	International Filing Date (day/month/year) 18 August 2000	Priority Date (day/month/year) 19 August 1999
International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ G09G 5/08, G02B 27/22		
Applicant DEEP VIDEO IMAGING LIMITED et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 5 sheet(s).

3. This report contains indications relating to the following items:

- | | | |
|------|-------------------------------------|---|
| I | <input checked="" type="checkbox"/> | Basis of the report |
| II | <input type="checkbox"/> | Priority |
| III | <input checked="" type="checkbox"/> | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| IV | <input type="checkbox"/> | Lack of unity of invention |
| V | <input checked="" type="checkbox"/> | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| VI | <input type="checkbox"/> | Certain documents cited |
| VII | <input type="checkbox"/> | Certain defects in the international application |
| VIII | <input type="checkbox"/> | Certain observations on the international application |

Date of submission of the demand 30 January 2001	Date of completion of the report 11 July 2001
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer MICHAEL HALL Telephone No. (02) 6283 2474

I. Basis of the report**1. With regard to the elements of the international application:***

- ☐ the international application as originally filed.
- ☒ the description, pages **3-8**, as originally filed,
pages , filed with the demand,
pages **1-2**, received on **27 June 2001** with the letter of **27 June 2001**
- ☒ the claims, pages , as originally filed,
pages , as amended (together with any statement) under Article 19,
pages , filed with the demand,
pages **9-11**, received on **27 June 2001** with the letter of **27 June 2001**
- ☒ the drawings, pages **1-3**, as originally filed,
pages , filed with the demand,
pages , received on with the letter of
- ☐ the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be nonobvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos: **19-21**

because:

☒ the said international application, or the said claims Nos. **19-21** relate to the following subject matter which does not require an international preliminary examination (*specify*):

Claims 19-20 rely on references to the drawings [PCT Rule 6.2(a)]

The scope of claim 21 includes an instruction manual, which is a mere presentation of information (PCT Rule 67.1(v)).

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claim Nos. **21**

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims 1-18	YES
	Claims	NO
Inventive step (IS)	Claims 1-18	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-18	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)Citations

D1 : US 5585821 KN 12/10/03
D2 : EP 454423 KN 12/10/03

NOVELTY (N) AND INVENTIVE STEP (IS)

D1 teaches movement of a cursor image by a user, via a mouse, between computer screens which are spaced physically apart (eg, columns 1-4 and Figures 2-5 of D1). However, these screens belong to different cathode ray tubes and lie in a common plane. Hence D1 does not teach or suggest a multiple layered configuration of screens as per independent claims 1 and 9, and consequently these claims and dependent claims 2-8 and 10-18 are novel and inventive in the light of D1.

D2 teaches a multilevel screen display for a table-top electronic game, with an input device for moving a screen image at least laterally on the top level screen (eg, column 1 lines 13-41, column 2 line 38-column 3 line 24, Figures 1-4 of D2). However, D2 does not disclose or suggest use of an input device to move the screen image *between* screens, and hence the claims are novel and inventive in the light of D2.

Finally, it is not obvious to combine the teachings of D1 and D2 to arrive at the claimed invention, as these citations are directed to very different physical screen configurations, and hence the claims are novel and inventive over the prior art.

INDUSTRIAL APPLICABILITY (IA)

The subject matter of the claims is applicable to three dimensional display systems.

VISUAL DISPLAY SYSTEM

TECHNICAL FIELD

This invention relates to a visual display system.

BACKGROUND ART

- 5 Particularly, the present invention relates to a visual display system including multiple screens which are spaced physically apart in a layered configuration.

Such screens are described in PCT Application Nos. PCT/NZ98/00098 and PCT/NZ99/00021.

- 10 These devices are created by combining multiple layers of selectively transparent screens. Each screen is capable of showing an image. In preferred embodiments the screen layers are liquid crystal display. Preferably the screens are aligned parallel to each other with a pre-set distance between them.

- 15 With this device images displayed on the screen furthest from view (background screen) will appear at some distance behind the images displayed on the screen closer to the viewer (foreground screen). The transparent portions in the foreground screen will allow viewers to see images displayed on the background screen.

This arrangement allowing multiple screens allows images to be presented at multiple levels giving the viewer true depth without use of glass or lens.

- 20 Up until now, software has been written to create visual sequences on the multi-level screens. These sequences have been mainly passive, mainly for viewing rather than for interaction.

While the visual effect of these sequences is spectacular, it will be desirable if

potential uses of a multi-level screen display could be explored further.

It is an object of the present invention to address this problem, or at least to provide the public with a useful choice.

Aspects of the present invention will now be described by way of example only with
5 reference to the following description.

DISCLOSURE OF INVENTION

According to one aspect of the present invention there is provided a visual display system including

multiple screens spaced physically apart in a layered configuration,

10 wherein each screen has a two-dimensional plane,

a visual indicator,

an input device,

a user selectable input,

the visual display system being characterised in that

15 the user can use the user selectable input to move the visual indicator via the input device out of the two-dimensional plane of a particular screen.

According to another aspect of the present invention there is provided a method of using a visual display system which has multiple screens spaced physically apart in a layered configuration,

20 wherein each screen has a two-dimensional plane,

the visual display system also including

CLAIMS:

1. A visual display system including

multi-level screen spaced physically apart,

wherein each screen has a 2 dimensional plane,

a visual indicator,

a input device,

a user selectable input,

the visual display system being characterised in that

the user can use the selectable input to move the visual indicator via the input device
out of the 2-dimensional plane, and onto another screen where both screens display
images simultaneously.
2. A visual display system as claimed in claim 1 wherein the visual indicator is a cursor.
3. A visual display system as claimed in either claim 1 or claim 2 wherein the input
device is a mouse.
4. A visual display system as claimed in any one of claims 1 to 3 wherein the user
selectable input is a mouse button.
5. A visual display system as claimed in any one of claims 1 to 4 which includes
software supplemental to the software drivers for the input device to cause the visual
indicator to move from one screen to another screen.
6. A visual display system as claimed in any one of claims 1 to 5 wherein the visual
indicator moves to a different z axis coordinate, but the same x – y coordinate.

7. A visual display system as claimed in any one of claims 1 to 6 wherein the movement of the visual indicator from one screen to another screen gives the appearance of providing a visual bridge between the screens.
8. A visual display system as claimed in any one of claims 1 to 7 wherein the visual indicator is a screen image.
9. A method of using a visual display system which has multi-level screens spaced physically apart,

wherein each screen has a 2 dimensional plane

the visual display system also including

a visual indicator,

a input device,

a user selectable input,

a method of characterised by the step of the user using the selectable input to move the visual indicator out of the 2-dimensional plane and onto another screen, where both screens display images simultaneously.
10. A method as claimed in claim 9 wherein a visual indicator is a cursor.
11. A method as claimed in either claim 9 or claim 10 wherein the input device is a mouse.
12. A method as claimed in any one of claims 9 to 11 wherein the user selectable input is a mouse button.
13. A method as claimed in any one of claims 9 to 12 which includes software supplemental to the software drivers for the input device to cause the visual indicator to move from one screen to another screen.

14. A method as claimed in any one of claims 9 to 13 wherein the visual indicator moves to a different z axis coordinate, but the same x – y coordinate.
15. A method as claimed in any one of claims 9 to 14 wherein the movement of the visual indicator from one screen to another screen gives the appearance of providing a visual bridge between the screens.
16. A method as claimed in any one of claims 9 to 15 wherein the visual indicator is a screen image.
17. A visual display system as claimed in any one of claims 1 to 8 wherein the input device is a pen.
18. A method as claimed in any one of claims 9 to 16 wherein the input device is a pen.
19. A method substantially as herein described with reference to and as illustrated by the company drawings.
20. A method of using a visual display system substantially as herein described with reference to and as illustrated by the accompanying drawings.
21. Media containing instructions for the operation of a visual display system as claimed/or described herein.

CLAIMS:

1. A visual display system including

multi-level screen spaced physically apart,

wherein each screen has a 2 dimensional plane,

a visual indicator,

a input device,

a user selectable input,

the visual display system being characterised in that

the user can use the selectable input to move the visual indicator via the input device
out of the 2 dimensional plane of particular screen.
2. A visual display system as claimed in claim 1 wherein the visual indicator is a cursor.
3. A visual display system as claimed in either claim 1 or claim 2 wherein the input
device is a mouse.
4. A visual display system as claimed in any one of claims 1 to 3 wherein the user
selectable input is a mouse button.
5. A visual display system as claimed in any one of claims 1 to 4 which includes
software supplemental to the software drivers for the input device to cause the visual
indicator to move from one screen to another screen.
6. A visual display system as claimed in any one of claims 1 to 5 wherein the visual
indicator moves to a different z axis coordinate, but the same x – y coordinate.

7. A visual display system as claimed in any one of claims 1 to 6 wherein the movement of the visual indicator from one screen to another screen gives the appearance of providing a visual bridge between the screens.
8. A visual display system as claimed in any one of claims 1 to 7 wherein the visual indicator is a screen image.
9. A method of using a visual display system which has multi-level screens spaced physically apart,

wherein each screen has a 2 dimensional plane

the visual display system also including

a visual indicator,

a input device,

a user selectable input,

a method of characterised by the step of the user using the selectable input to move the visual indicator out of the 2-dimensional plane of a particular screen and onto another screen.
10. A method as claimed in claim 9 wherein a visual indicator is a cursor.
11. A method as claimed in either claim 9 or claim 10 wherein the input device is a mouse.
12. A method as claimed in any one of claims 9 to 11 wherein the user selectable input is a mouse button.

13. A method as claimed in any one of claims 9 to 12 which includes software supplemental to the software drivers for the input device to cause the visual indicator to move from one screen to another screen.
14. A method as claimed in any one of claims 9 to 13 wherein the visual indicator moves to a different z axis coordinate, but the same x – y coordinate.
15. A method as claimed in any one of claims 9 to 14 wherein the movement of the visual indicator from one screen to another screen gives the appearance of providing a visual bridge between the screens.
16. A method as claimed in any one of claims 9 to 15 wherein the visual indicator is a screen image.
17. A visual display system as claimed in any one of claims 1 to 8 wherein the input device is a pen.
18. A method as claimed in any one of claims 9 to 16 wherein the input device is a pen.
19. A method substantially as herein described with reference to and as illustrated by the company drawings.
20. A method of using a visual display system substantially as herein described with reference to and as illustrated by the accompanying drawings.
21. Media containing instructions for the operation of a visual display system as claimed/or described herein.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/NZ00/00160**A. CLASSIFICATION OF SUBJECT MATTER**Int. Cl. ⁷: G09G 5/08, G02B 27/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: G02B, G09F, G09G, H04N 13/-, 15/-

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DWPI, JAPIO

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
KN X	US 5585821 A (ISHIKURA ET AL.) 17 December 1996 Columns 1-4, Figures 2-5	1-3, 5, 8, 9-11, 13, 16-18
KN Y	US 5473344 A (BACON ET AL.) 5 December 1995 Columns 1-2, 7-10, Figures 1-2	1-20
KN Y 12/10/03	EP 454423 A (TFE HONG KONG LIMITED) 30 October 1991 Columns 1-3, Figures 1-5	1-20

☐ Further documents are listed in the continuation of Box C ☒ See patent family annex

- | | |
|---|---|
| <ul style="list-style-type: none">• Special categories of cited documents:"A" document defining the general state of the art which is not considered to be of particular relevance"E" earlier application or patent but published on or after the international filing date"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)"O" document referring to an oral disclosure, use, exhibition or other means"P" document published prior to the international filing date but later than the priority date claimed | <ul style="list-style-type: none">"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art"&" document member of the same patent family |
|---|---|

Date of the actual completion of the international search

16 November 2000

Date of mailing of the international search report

28 NOV 2000

Name and mailing address of the ISA/AU

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/NZ00/00160**Box I** Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos : 21
because they relate to subject matter not required to be searched by this Authority, namely:
The scope of the claim includes an instruction manual, which is a mere presentation of information as per PCT Rule 39.1(v).
2. ☐ Claims Nos :
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos :
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/NZ00/00160

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
US	5585821	JP	6274305				
US	5473344	CA	2139696	EP	662669	JP	8030388
		US	5963197				
EP	454423	GB	2245092				
END OF ANNEX							